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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,400	01/15/2004	Hong-Shik Moon	0630-1946P	4940
2292	7590	05/19/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			NGUYEN, LINH V	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	

2819

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/757,400

Applicant(s)

MOON, HONG-SHIK

Examiner

Linh V. Nguyen

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 and 8-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to application 10/757,400 filed on 1/15/04.

Claims 1 - 13 pending on this application.

### *Specification*

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 4, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipate by Doi et al . U.S. patent No. 6,392,485.

Regarding claim 1, Fig. 1 of Doi et al. discloses a CMOS operational amplifier comprising: an amplifying unit (2) for differentially amplifying signals (Vin+/-) inputted to an inverting input terminal (+ input terminal of M5) and non-inverting input terminal (- input terminal of (M4) to reduce an input offset voltage and outputting the amplified signal to an output terminal (output terminals of M4 and M5), and a slew enhancing unit

(3) for increasing a slew rate (Col. 8 lines 1 – 10) of the amplified signal outputted to the output terminal (output terminals of M4 and M5) on the basis of the input voltage value of the inverting input terminal (inverted input terminal of M4) and the input voltage value of the non-inverting input terminal (non-inverted input terminal of M5).

Regarding claim 2, wherein the amplifying unit (M4, M5) and the slew enhancing unit (3) are implemented by a plurality of CMOS (Complementary Metal Oxide Semiconductor).

Regarding claim 3, wherein the amplifying unit comprises: a first differential amplifier (M4, M5) for differentially amplifying a signal inputted to the inverting input terminal ( $V_{in-}$ ) and the non-inverting input terminal ( $V_{in+}$ ); a symmetrical amplifier (3, 4) for generating a signal symmetrical to the signal outputted from the non-inverting output terminal of the first differential amplifier (M4, M5) and differentially amplifying the generated signal (signal output from 3, which is a input signal at the gate of M15) and the signal outputted from the non-inverting output terminal of the first differential amplifier (output signals of, M5); and an amplified signal output unit (5) for differentially amplifying signals (input signals at the gate of M15, M16) inputted from an inverting output terminal (output signals of 3 and 4) and a non-inverting output terminal (output signals of 3 and 4) of the symmetrical amplifier (3, 4) and outputting the amplified signals to the output terminal ( $V_{out}$ ).

Regarding claim 4, wherein the amplifying unit further comprises: a compensator (C1, C2, R2, R1) for guaranteeing frequency stability through a frequency compensation of the amplifier (Fig. 1).

Regarding claim 6, wherein the symmetrical amplifier (3, 4) comprises an input symmetry unit (Vb3, Vb4) for generating a signal symmetrical to the signal outputted from the non-inverting output terminal of the first differential amplifier (M5, M4) and outputting the generated signal (output of 3 and 4); and a second differential amplifier (M15, M16) for differentially amplifying the signal outputted from the non-inverting output terminal of the first differential amplifier (M4, M5) and the signal generated by the input symmetry unit (3, 4).

Regarding to claim 7, wherein the input symmetry unit (3, 4) amplifies a common voltage of signals (Vb4, Vb33) inputted to the inverting input terminal and the non-inverting input terminal (node between M4 and M7; and node between M5 and M10) and generates the symmetrical signal (output signals of 3 and 4).

### ***Allowable Subject Matter***

5. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach wherein, wherein the compensator includes a resistor and a condenser connected in series to the resistor.

6. Claims 8 - 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach wherein the slew enhancing unit comprises a discharge controller for generating a signal for

discharging a current charged in a capacitive load connected to the output terminal on the basis of the signal outputted from the non-inverting output terminal of the first differential amplifier and the signal generated by the symmetry amplifier; a charge controller for generating a signal for charging a current to the capacitive load connected to the output terminal on the basis of the signal outputted from the inverting output terminal of the first differential amplifier; and a discharge/charge driving unit for discharging a current charged in the capacitive load connected to the output terminal or charging a current to the capacitive load on the basis of the signals generated from the discharge controller and the charge controller.

### ***Prior Art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

### ***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (571) 272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Tokar can be reached at (571) 272-1812. The fax phone numbers for the organization where this application or proceeding is assigned are (703-872-9306) for regular communications and (703-872-9306) for After Final

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communications.

5/11/05

Linh Van Nguyen

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A handwritten signature in black ink, appearing to read 'Linh Van Nguyen', written over the printed name.